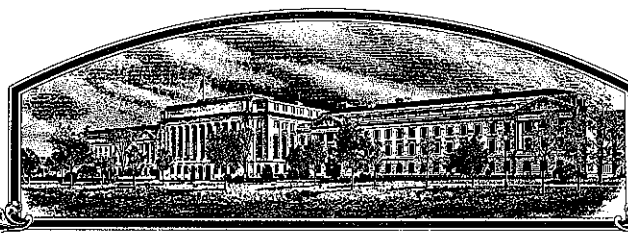


No.

9500032



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME;

Pioneer Hi-Bred International, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

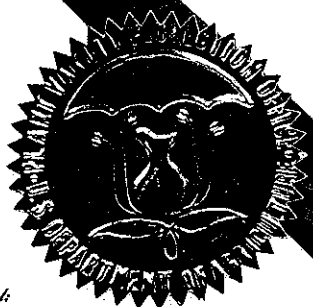
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'9281'



Attest:

Marsha A. Hunter
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

*In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed at
the City of Washington, D.C. this thirtieth
day of January in the year of our Lord
one thousand nine hundred and ninety-six.*

[Signature]
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(INSTRUCTIONS ON REVERSE)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.

3. VARIETY NAME
9281

Pioneer Hi-Bred International, Inc.

4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP)

5. PHONE (include area code)

700 Capital Square

400 Locust St.

Des Moines, IA 50309

(515)270-3582

FOR OFFICIAL USE ONLY

PVPO NUMBER

9500032

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Date

NOVEMBER 8, 1994

Time

☐ A.M.☒ P.M.F
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S

Filing and Examination Fee:

\$2,325.00

Date

OCTOBER 27, 1994

R
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V
E
D

Certificate Fee:

\$300.00

Date

December 21, 1995

6. GENUS AND SPECIES NAME

Glycine max

7. FAMILY NAME (Botanical)

Leguminosae

8. CROP KIND NAME (Common Name)

Soybean

9. DATE OF DETERMINATION

October 1991

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)

Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

Iowa

12. DATE OF INCORPORATION

1926

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

John Grace
7300 NW 62nd Ave.
PO Box 1004

Johnston, IA 50131-1004

Mike Roth (copy)

700 Capital square, 400 Locust St.
Des Moines, IA 50309

PHONE (include area code):

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

- a. ☒ Exhibit A, Origin and Breeding History of the Variety
 b. ☒ Exhibit B, Novelty Statement
 c. ☒ Exhibit C, Objective Description of Variety
 d. ☒ Exhibit D, Additional Description of Variety
 e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership
 f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office 10/28/94
 g. ☒ Filing and Examination Fee (\$2,325) made payable to "Treasurer of the United States"

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act) ☐ YES (If "YES," answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?

☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?

☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give data. _____).☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?

☐ YES (If "YES," GIVE NAMES OF COUNTRIES AND DATES)☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s))

A. John Grace, III

CAPACITY OR TITLE

DATE

Soybean Research Coordinator

10/21/94

SIGNATURE OF APPLICANT (Owner(s))

CAPACITY OR TITLE

DATE

Exhibit A: Origin and Breeding History

BREEDING HISTORY OF 9281

Variety 9281 was derived from the cross 9273/30438 in the winter of 1989-1990.

9273	was derived from	2981/A3127
30438	"	"
30367	"	"
30313	"	"
30293	"	"
XB30C	"	"
30176	"	"
30131	"	"
30104	"	"
6565	"	"

In the spring of 1990 F1 seed was grown and inoculated with Phytophthora. Resistant plants were transplanted to the field. Plants were harvested and sent to Chile, where individual F3 plants were harvested.

F3 plant rows were grown in 1991. Seed from each row was screened and confirmed to be homozygous for the Rpslk gene. Bulk seed from a single row was sent to Chile for increase.

Since 1991, variety 9281 has undergone two years of extensive testing and purification. It has been observed to be uniform and stable for all plant traits from generation to generation, with no evidence of variants.

In the winter of 1992-1993 an 8 acre increase was grown in Chile. In 1993, 206 acres of foundation seed equivalent were grown.

Exhibit B: Novelty Statement

Variety 9281 is most similar to Variety 9273. However, 9281 is resistant to races 1-3 of *Phytophthora megasperma* var. *sojae* while 9273 is susceptible to these races.



U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION
 PLANT VARIETY PROTECTION OFFICE
 BELTSVILLE, MARYLAND 20705

EXHIBIT C
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Pioneer Hi-Bred International, Inc.	TEMPORARY DESIGNATION	VARIETY NAME 9281
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 700 Capital Square 400 Locust St. Des Moines, IA 50309		FOR OFFICIAL USE ONLY PVPO NUMBER 9500032

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
 3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
 4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) _____

★ 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow

2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low

2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1^a)2 = Type B (SP1^b)

★ 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ 10. LEAFLET SHAPE:

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) _____

4

11. LEAFLET SIZE:

☐ 21 = Small ('Amsoy 71'; 'A5312')
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

☐ 31 = Light Green ('Weber'; 'York')
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

★ 13. FLOWER COLOR:

☐ 2

1 = White

2 = Purple

3 = White with purple throat

★ 14. POD COLOR:

☐ 2

1 = Tan

2 = Brown

3 = Black

★ 15. PLANT PUBESCENCE COLOR:

☐ 2

1 = Gray

2 = Brown (Tawny)

16. PLANT TYPES:

☐ 21 = Slender ('Essex'; 'Amsoy 71')
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

★ 17. PLANT HABIT:

☐ 3

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. MATURITY GROUP:

☐ 0 ☐ 51 = 000
9 = VI2 = 00
10 = VII3 = 0
11 = VIII4 = I
12 = IX5 = II
13 = X

6 = III

7 = IV

8 = V

★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★

☐ 0Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★

☐ 1Bacterial Blight (*Pseudomonas glycines*)

★

☐ 0Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★

☐ 1Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojina*)

★

☐ 0

Race 1

☐ 0

Race 2

☐ 0

Race 3

☐ 0

Race 4

☐ 0

Race 5

☐

Other (Specify)

☐ 0Target Spot (*Corynespora cassicola*)☐ 0Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ 0Powdery Mildew (*Microsphaera diffusa*)

★

☐ 1Brown Stem Rot (*Cephalosporium gregatum*)☐ 0Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

- ★ ☐ 1 Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)
- ☐ 0 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 1 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☐ 2 Race 1 ☐ 2 Race 2 ☐ 2 Race 3 ☐ 2 Race 4 ☐ 2 Race 5 ☐ 0 Race 6 ☐ 2 Race 7
- ☐ 2 Race 8 ☐ 2 Race 9 ☐ Other (Specify) _____

VIRAL DISEASES:

- ☐ 1 Bud Blight (Tobacco Ringspot Virus)
- ☐ 1 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ 1 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 1 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☐ 1 Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 0 Race 1 ☐ 0 Race 2 ☐ 1 Race 3 ☐ 0 Race 4 ☐ Other (Specify) _____
- ☐ 0 Lance Nematode (*Hoplolaimus Colonus*)
- ★ ☐ 0 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ OTHER DISEASE NOT ON FORM (Specify): _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☐ 0 Iron Chlorosis on Calcareous Soil
- ☐ Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	9273	Seed Coat Luster	9273
Leaf Shape	9273	Seed Size	9273
Leaf Color	9273	Seed Shape	9273
Leaf Size	9273	Seedling Pigmentation	9273

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
9281 Submitted	126	1.2	76	6.9	11.3	41.9	21.9	16	
9273 Name of Similar Variety	124	1.2	79	7.1	11.5	41.9	22.1	16	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

Exhibit D:

In Exhibit C we have identified 9281 as susceptible to bacterial blight, brown spot, pod and stem blight, rhizoctonia root rot, bud blight, yellow mosaic, cowpea mosaic, pod mottle, and seed mottle. This does not mean that we consider 9281 to be worse than other varieties of similar maturity in reaction to these challenges. Rather, we do not consider 9281 to be immune to them. Therefore, we have chosen to be conservative and have identified 9281 as "susceptible".

Variety 9281 is a late group II variety. If group II maturities are divided into tenths, the relative maturity of 9281 is 2.8.

Isozyme information for 9281.

<u>ACO2</u>	<u>ACO3</u>	<u>ACO4</u>	<u>ACP</u>	<u>DIA</u>	<u>ENP</u>	<u>IDH1</u>	<u>IDH2</u>	<u>MDH</u>	<u>MPI</u>	<u>PGM</u>	<u>PHI</u>
1	1	1	A	B	A	1	1	B	A	1	1

Exhibit E.

Variety '9281' was originated and developed by plant breeders from whom, by agreement, Pioneer Hi-Bred International has obtained exclusive rights to protect and market variety '9281'. No rights to such invention, discovery, or development are retained by the plant breeders or by any other party.



United States
Department of
Agriculture

Agricultural
Marketing
Service

Science
Division

9500032
Plant Variety Protection Office
NAL Building, Room 500
10301 Baltimore Blvd.
Beltsville, MD 20705-2351

October 25, 1995

OCT 30 1995

Dr. John Grace
Pioneer High-Bred International
7300 NW 62nd Avenue
PO Box 1004
Johnston, Iowa 50131-1004

Dear Dr. Grace:

SUBJECT: PVP Application No. 9500032, SOYBEAN, '9281': Exhibit E, Statement of the Basis of the Applicant's Ownership

Before final recommendation for issuance can be made for '9281', certain information needs to be supplied regarding the statement of the basis for ownership. The rights of an applicant to a variety, for plant variety protection purposes, are derived from the original breeder. It is thus necessary to determine the rights that original breeder would have had (or has) under the Plant Variety Protection Act had he or she desired to apply for plant variety protection.

Please supply responses to the following questions:

NOTE: It is not requested nor are you required to reveal the identity of the original breeder.

Is the applicant the original breeder¹? Yes X No

If no, please answer the following:

a. If original rights to variety were owned by individual(s):

Is (are) the original breeder(s) a U.S. national(s)? Yes No

If no, give country

b. If original rights to variety were owned by company:

Is the original breeder a U.S. based company? Yes No

If no, give country

The requested information must be received in the Plant Variety Protection Office on or before **November 27, 1995**, or the application will be deemed abandoned. A request for an extension of time to supply the information may be made on or before the deadline specified above.

¹ Original breeder may be individual company who directed final breeding. See PVPA §41(a)(2) for definition.

